

CLAIMS

WHAT IS CLAIMED IS:

1. A method of adjusting a time delay between a first audio signal and a second
5 audio signal, the method comprising:

generating the first audio signal from a buffer as a first data stream;

generating the second audio signal from the buffer as a second data stream after
an initial time delay;

receiving the first data stream at a first sample rate converter at a first
10 consumption rate and generating a first output data stream at an output sample rate; and

receiving the second data stream at a second sample rate converter at a second
consumption rate and generating a second output data stream at the output sample rate;
and

changing one of the first and second consumption rates so that the initial time
15 delay between the first and second output data streams is adjusted over time to provide
an adjusted time delay.

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2. The method of claim 1 wherein the first data stream represents a direct path signal and the second data stream represents a reflected signal, and further comprising calculating the adjusted time delay based on the difference between propagation delay of the direct path signal and the reflected signal.

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3. The method of claim 1 wherein the buffer is located on a host computer and wherein receiving the first and second data streams comprises receiving the data streams on a sound card.

4. The method of claim 1 wherein receiving the first and second data streams comprises interpolating data samples of the data streams to convert the consumption rates to the output sample rate.

5. The method of claim 1 wherein changing the consumption rate comprises increasing the rate to decrease the time delay.

6. The method of claim 1 wherein changing the consumption rate comprises decreasing the rate to increase the time delay.

7. The method of claim 1 further comprising changing both the first and second consumption rates.

8. The method of claim 1 wherein the first and second consumption rates are approximately the same prior to changing one of the consumption rates.

5 9. The method of claim 1 wherein changing the consumption rate comprises measuring the adjusted time delay, comparing it to a desired delay, and adjusting the rate of consumption until the measured output time delay matches the desired delay.

10 10. The method of claim 9 wherein adjusting the consumption rate comprises providing continuous feedback and correcting the consumption rate as required.

15 11. The method of claim 9 wherein adjusting the consumption rate comprises increasing or decreasing the rate for a set period of time to correct error in the measured delay.

12. A system for adjusting a time delay between a first audio signal and a second audio signal, the system comprising:

a buffer operable to receive an audio signal as a data stream which includes a plurality of samples and transmit first and second audio samples; and

5 a first sample rate converter operable to receive the first audio samples from the buffer at a first consumption rate and generate a first output data stream at an output sample rate;

10 a second sample rate converter operable to receive the samples from the second audio samples from the buffer at a second consumption rate and generate a second output data stream at the output sample rate; and

a controller operable to change one of the first and second consumption rates to adjust a time delay between the first output data stream and the second output data stream over time.

15 13. The system of claim 12 wherein the buffer is located on a host computer and the sample rate converters are located on a sound card.

14. The system of claim 12 wherein the first and second audio samples are output from the buffer with an initial time delay therebetween.

15. The system of claim 12 further comprising a queue configured to receive the samples from the buffer and transmit the samples to the sample rate converters.

16. The system of claim 12 wherein the controller is configured to measure the time delay, compare it to a desired delay, and adjust one of the first and second consumption rates until the measured time delay matches the desired delay.

17. The system of claim 16 further comprising a feedback system for providing continuous feedback to the controller and correcting the consumption rate as required.

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